REMARKS

Objection of Drawings under 37 CRF 1.83(a) and Objection of the Specification under 37 CFR 1.71

The drawings are objected to under 37 CFR 1.83(a) because they fail to show the connection of the medial traces 5 connected to a chosen pair T3, R3. The disclosure of the specification is objected to under 37 CFR 1.71 as failing to enabling the connection of foot prints T2, T3, R3, and R2.

In reply to this objection, applicant has added a new drawing as FIG. 9 and the corresponding description thereof in the specification. FIG. 9 is a plane view of an intermediate layer of the printed circuit board 12, wherein traces extending from footprints T1, R1, T2, R2, T4 and R4 are omitted. Therefore, continuous traces extending from T3 and R3 are clearly shown. Combine with the description of amended Paragraph [0020] in the specification: "The trace connected to the conductive footprint T3 extends from the corresponding metalized hole 4 and then extends down two layers, back under itself, via the dotted lines T3', under the footprint R2, and continuing on to C3. The trace connected to the footprint R3 extends from the end of a corresponding metallized hole 4 and then extends down one layer, back under itself, via the dotted lines T3', under pad T2, and continuing on to C3'. C3 and C3' are then a coupled differential pair running down the length of the PCB." The connections of T3, R3 with medial trace 5 and further C3, C3' are believed to be clear.

Applicant also provides the replacement sheets for FIGS. 3, 5 and 7 wherein the position of T3' which originally was mistakenly showed on the third layer, is now corrected to be on the second layer, and the position of R3' which

originally was mistakenly shown on the second layer, is now corrected to be on the third layer, so as to comply with the disclosure of the original filing. It is noted that in the last amendment submitted on 07/24/03, applicant tried to amend the specification to comply with the incorrect drawings, and it was improper essentially. This is the reason why in this present amendment applicant has corrected the drawings for removal of inconsistence between the drawings and the specification for correctly unveiling the invention.

Applicant believes that the amended specification and drawings now correctly reflect and disclose the instant invention including the terminologies and the reference labeling, thus having the reader easily understand the spirit of the invention without confusion.

Applicant apologies for his own typos and/or drawings errors which resulted in difficulties for the Examiner to correctly and efficiently grasp the invention before.

Objections of the Claims under 35 U.S.C. 112

Claims 1-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement and failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The chosen pair of footprint and the relocated footprint and the footprint on the internal layer, as claimed in all the claims, claims 1, 11, 12, 17, 18, 19 and 20 are not properly disclosed from the figures, figure 1, 4 and 6 and the related description, as explained in the drawing rejection and specification rejection.

In order to overcome this rejection, applicant has amended the claim language and some quoted labels of elements, consisting with the related drawings and description of the specification, are added for better understanding.

It should be noted that these labels are only for easy understanding of the claims but not restriction of the corresponding elements claimed. Combining with the amended drawing figures and the specification, the claims 1-20 are believed to comply with 35 U.S.C. 112, first and second paragraphs.

Rejections of the Claims under 35 U.S.C. 103(a)

Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hashim, US Patent No. 6,107,578, and further in view of Winings, US Patent No. 6,250,968. This rejection is respectfully considered and traversed below.

Regarding claim 1, Hashim discloses a noise reduced printed circuit board comprising: a substrate having two insulated layers for mounting conductive material; a first set of conductive footprints being mounted on one of the insulated layers, each footprint of said first set being accessible from outside of the substrate and electrically connectable with a conductor extending from an electrical device (circuit board 14 with conductive path T2-R2, and T4-R4, on top of another layer 16, see figure 1 and 3, column 3, line 13-25); and a second set of conductive footprints each being located on an area of another insulated layers aligned with and spaced from one footprint of the first set. Wining discloses alternating the trace connection in the internal layers (as shown in FIG. 5). However, neither Hashim nor Winings discloses the limitation claimed in the amended claim 1 of the present invention that "at least one of the second set of conductive footprints (R3') being located on an area of the other insulated layer aligned with and spaced from one footprint (T2) of the first set and connected to another footprint (R3) of the first set; wherein said one footprint (T2) of the first set is connected with the first conductor, and said another footprint (R3) of the

first set is connected with a third conductor which is of same differential pair with the second conductor." Therefore, crosstalk between the first and second conductors can be reduced.

Regarding claim 11, neither Hashim nor Winings discloses that "each trace connected to a first chosen pair of footprints (T3, R3) is relocated to have portion of them pass through an area of the intermediate layer vertically spaced from the location of one footprint of a second chosen pair (R2, T2) on the outer face of the substrate and an expanded conductive footprint (T3', R3') is formed over there to couple with the footprint it faces."

Regarding claim 17, neither Hashim nor Winings discloses that "the footprint connected with said one conductor of said first pair of the electronic component couples with one footprint of a third set which is electrically connected to the footprint where the other conductor of said second pair not cross talked with said one conductor of said first pair is connected."

Regarding claim 18, neither Hashim nor Winings discloses that "a plurality of connecting conductive traces (5) each being electrically connected to one footprint, the traces connected respectively to every footprint of one chosen pair being located on two different insulated layers; wherein said traces located on two different insulated layers are aligned with each other along a predetermined distance."

Regarding claim 19, neither Hashim nor Winings discloses that "wherein the second section (T3') of the first conductive trace is arranged in a second mounting surface (12) and in alignment with the first section (R2) of the second

conductive trace; wherein the third section (C3) of the first conductive trace is alignment with the third section (C3') of the third conductive trace."

Regarding claim 20, neither Hashim nor Winings discloses that "a distance between the first layer (11) and the second layer (12) is different from that between the first layer (11) and the third layer (13), and a size of said fifth trace (R3') and that of the said sixth trace (T3') are dimensioned according to those distances."

Therefore, independent claims 1, 11 and 17-20 and the dependent claims 2, 4-6, 8-10, 12-13 and 15 are believed to be non-obvious.

In brief, Winings essentially discloses the plural trace arrangements in acommon layer, and Hashim essentially discloses different differential pairs running at different layers. None of them disclose or suggest the single differential pair simultaneously extending between different layers for resulting in counterbalancing crosstalk with regard to another adjacent differential pair. Thus, the combination of Winings and Hashim can not render obvious the invention.

Respectfully submitted,
Juntwait et al.
By _____
Wei Te Chung

Registration No.: 43,325
Foxconn International, Inc.
P. O. Address: 1650 Memorex Drive,
Santa Clara, CA 95050
Tel No.: (408) 919-6137